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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,257	02/06/2006	Tomoo Sugawara	4670-0120PUS1	3057
2292 7590 09/12/2007 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER TESKIN, FRED M	
			ART UNIT 1713	PAPER NUMBER
			NOTIFICATION DATE 09/12/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

**Office Action Summary**

Application No.

10/567,257

Applicant(s)

SUGAWARA, TOMOO

Examiner

Fred M. Teskin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4,5 and 7-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5 and 9 is/are rejected.
- 7) ☒ Claim(s) 7, 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Amendments presented in the reply filed July 9, 2007 are acknowledged. Claims 3 and 6 have been cancelled and claims 7-9 added. Accordingly, claims 1, 2, 4, 5 and 7-9 are currently pending and under examination.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 2, 4, 5 and 9 stand rejected under 35 U.S.C. 103(a) as being unpatentable over GB 1533124, alone or in view of EP 0283719 ("Hara").

The rejection is maintained for the reasons of record (see prior Action, pp. 3-5) and those which follow.

Applicants' arguments and the Fujita declaration under Rule 132 filed July 9, 2007 have been fully considered but are not persuasive of patentability.

Applicants argue Showa Denko (GB '124) and Hara are completely silent relative to setting the amount of aromatically condensed ring-containing cycloolefin monomer to the claimed range and to use of aromatically condensed ring-containing cycloolefin monomer to decrease the amount of flame retardant that is necessary.

Examiner disagrees.

Regarding the claimed amount, Showa Denko exemplifies ring-opening polymerization of mixtures including 5,6-dichloromethyl-bicyclo-[2.2.1]-heptene-2 (monomer A) and specific phenyl-substituted norbornene monomers (monomer B), see

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Examples 57 and 58. The reported concentration of monomer B (40 mole %) appears to equate to a weight-% amount within the presently claimed range. And while the phenyl substituent is not part of a condensed ring, Example 48 of Showa Denko teaches the use of 1,4-dihydro-1,4-methanonaphthalene at 1 mol %. This species of monomer B contains a benzene ring condensed with norbornene, and thus corresponds to applicants' aromatic condensed ring-containing monomer. In addition, Showa Denko generically teaches that the proportion of the unsaturated cyclic compound (corresponding to monomer B therein) is at most 50 mole percent based on total monomers and lists the aromatic-norbornene derivatives among particularly preferred unsaturated cyclic comonomers (see page 11, lines 50+ and page 12, lines 23-28). As such, Showa Denko would have suggested including in its polymerizable composition an aromatic condensed ring-containing monomer like 1,4-dihydro-1,4-methanonaphthalene in an amount within applicants' claimed range. Further, it is not necessary to the *prima facie* case that the reference teach the use of an aromatically condensed ring-containing cycloolefin monomer for the same purpose as applicants. The motivation in the prior art to combine reference teachings does not have to be identical to that of applicants to establish *prima facie* obviousness. *In re Kemps*, 40 USPQ2d 1309, 1311 (Fed. Cir. 1996)

With respect to Example 48 of Showa Denko, applicants argue that the compound used in this example is "impossible in theory" to synthesize because a compound (i), shown in an attached Appendix A, which is necessary in synthesizing the compound, cannot exist.

However, the reaction product of the synthesis shown in Appendix A consists of a cyclohexadiene ring condensed with norbornane. By contrast, the compound used in Example 48 of Showa Denko contains a benzene ring condensed with norbornene, as do the general formulae (VIII) and (IX) therein. As such, the reaction product depicted in the appendix does not correspond to the aromatic-norbornene derivatives taught by Showa Denko. And in any event, the cycloaddition reaction of benzyne and cyclopentadiene to produce benznorbornadiene is known in the prior art as evidenced by Brennan *et al*, cited herewith (see page 324, diene 1 and footnote 1 and page 330, first paragraph under Experimental Section). Diene 1 of the cited article has the same structure as 1,4-dihydro-1,4-methanonaphthalene and benzyne appears to correspond to the compound (i) shown in the appendix. Thus, prior art knowledge of a synthetic method for making the compound used in the relevant example of Showa Denko is established.

Further, relying on a comparison of inventive Experiments 1 and 2 of the Fujita declaration and Comparative Examples 1 and 2 in the Specification, applicants note that for the laminates of the invention, flaming times were 7 seconds, whereas in the comparative examples, flaming times were 30 seconds or more. However, in neither comparative example was any aromatically condensed ring-containing monomer used. The declaration fails to explain how such comparison is representative of the closest embodiments of Showa Denko, wherein an aromatic ring-containing monomer is used which contains a benzene ring condensed with norbornene (Example 48) or a phenyl substituent on a norbornene ring (Example 57), and wherein the ring-opening

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polymerization products are characterized as excellent in flame retardant capability (page 21, ll. 13-15). As such, the declaration is deficient in that the purported evidence of unexpected results does not relate to the closest prior art, *In re DeBlauwe*, 222 USPQ 191, 196 (Fed. Cir. 1984). Thus, the evidence of unobviousness of record fails to outweigh the evidence of obviousness of record.

Claims 7 and 8 are objected to as being dependent on a rejected base claim but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claim. Inclusion in the claimed composition of an aromatic condensed ring-containing cycloolefin monomer having three unsaturated aliphatic rings (claim 7) or tetracyclo[9.2.1.0<sup>2,10</sup>.0<sup>3,8</sup>]tetradeca-3,5,7,12-tetraene (claim 8) is not taught nor fairly suggested in the available prior art.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner F. M. Teskin whose telephone number is (571) 272-1116. The examiner can normally be reached on Monday through Thursday from 7:00 AM - 4:30 PM, and can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The appropriate fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

FMTeskin/09-05-07

  
**FRED TESKIN**  
**PRIMARY EXAMINER**  
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